



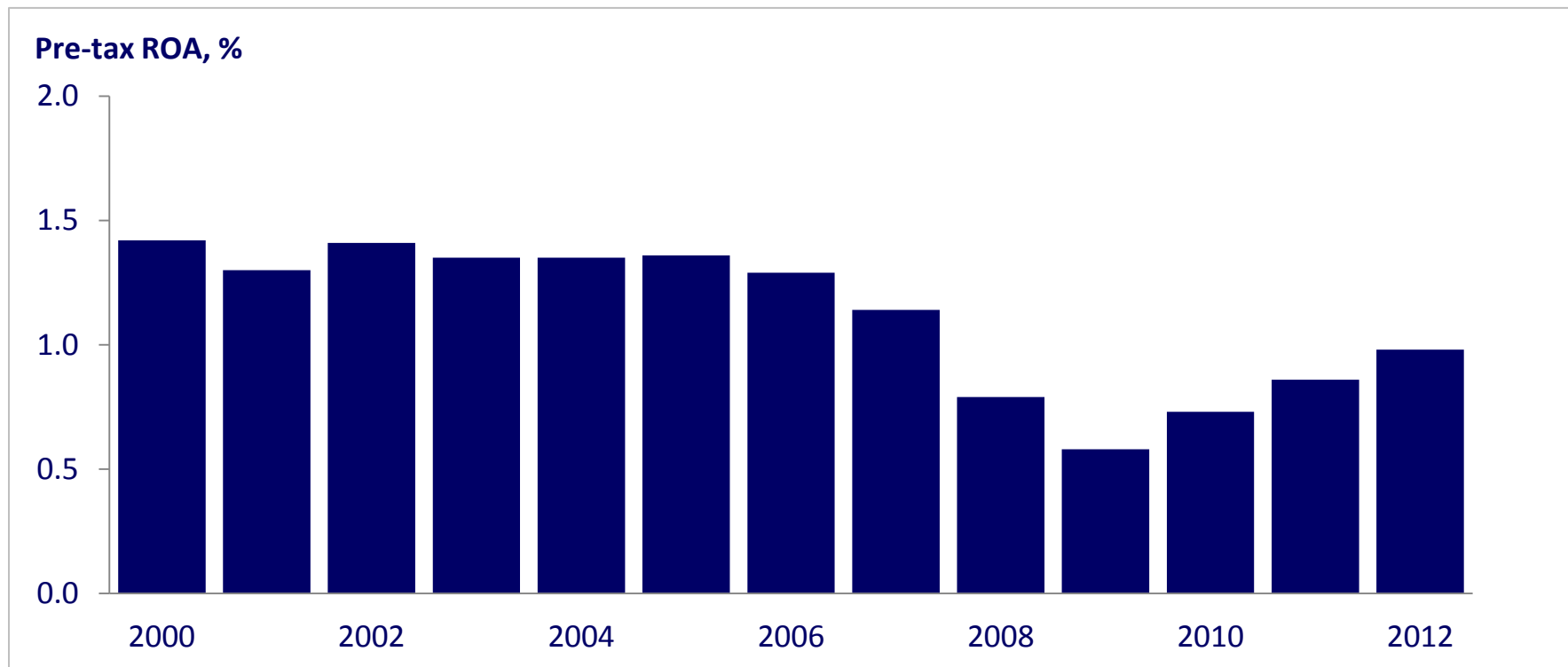
FEDERAL DEPOSIT INSURANCE CORPORATION

Managing Interest Rate Risk

Scope of Discussion

- **Recent Industry Trends**
- **Board Responsibilities**
- **Types of IRR**
- **Measurement Systems**
- **Critical Assumptions**
- **Internal Control and Review**

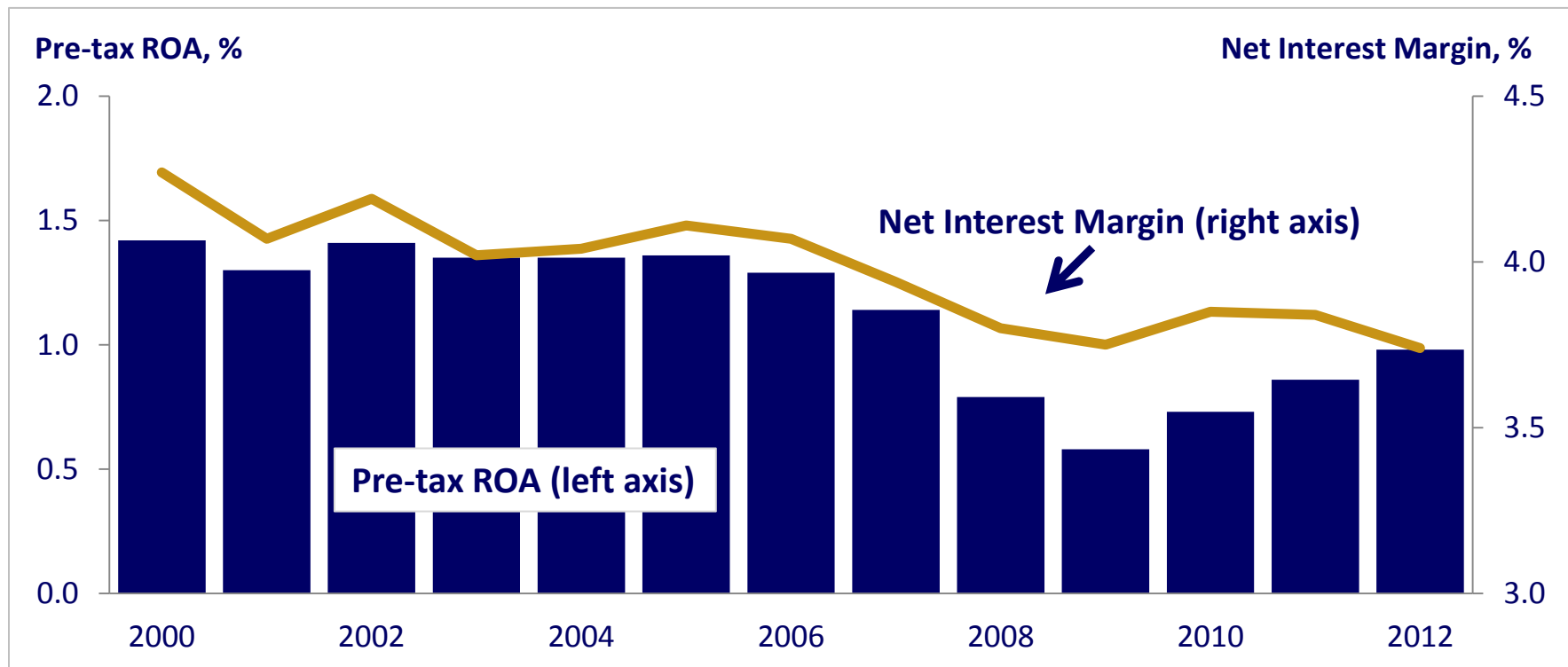
Earnings Have Begun to Recover, but Lower Margins Continue to Hamper Performance



Source: Call Reports & TFRs. Based on median figures of all institutions under \$1B in assets

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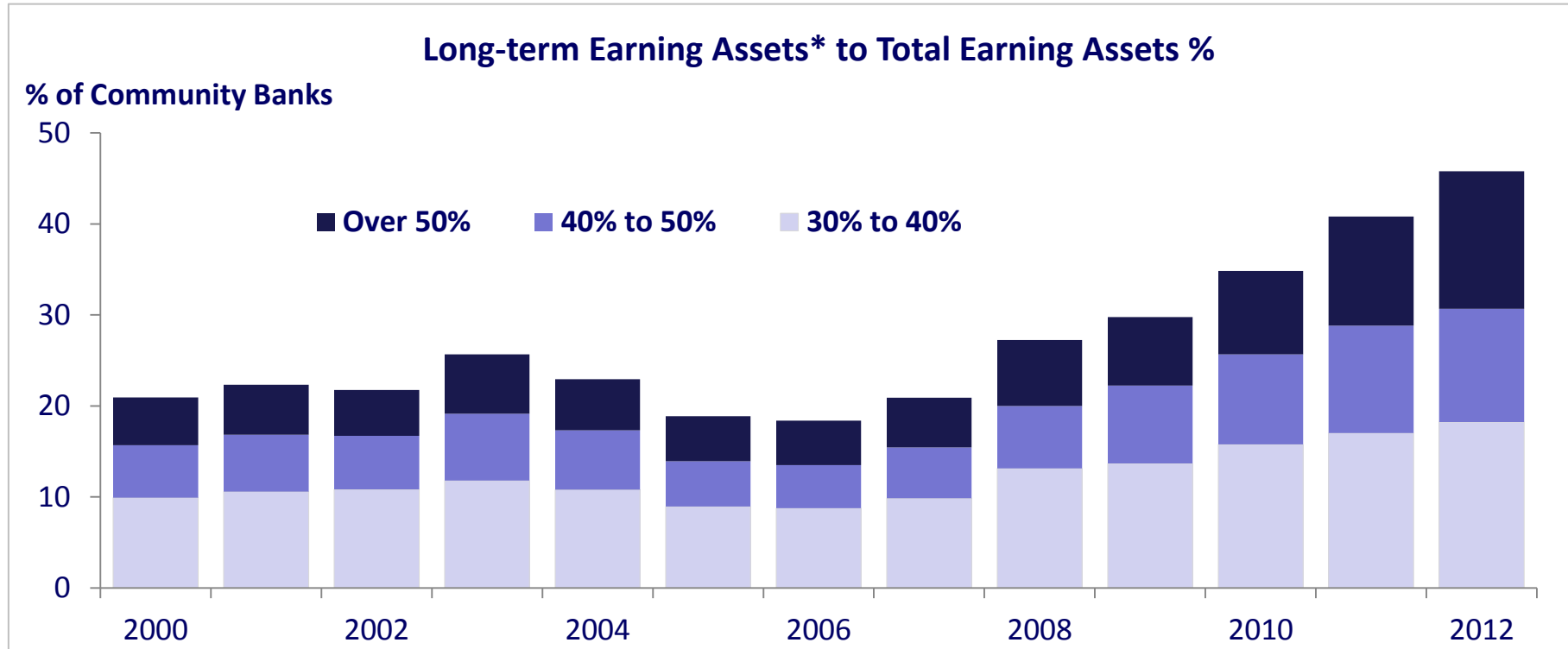
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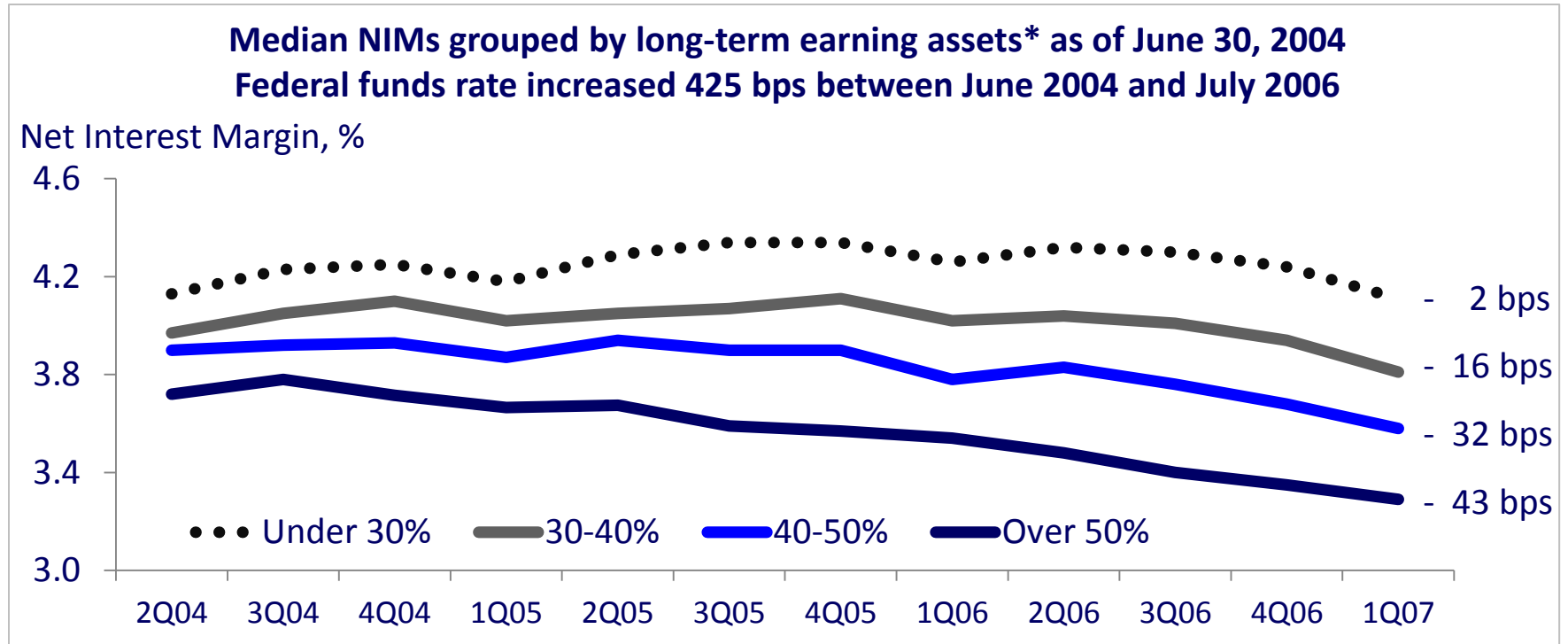
Large Long-term Exposures have Risen Sharply Relative to the Mid-2000s



Source: Call Reports. Based on median figures of Call filers under \$1B in assets

*Earning assets maturing / repricing > 5 years – Excludes Former OTS Supervised banks.

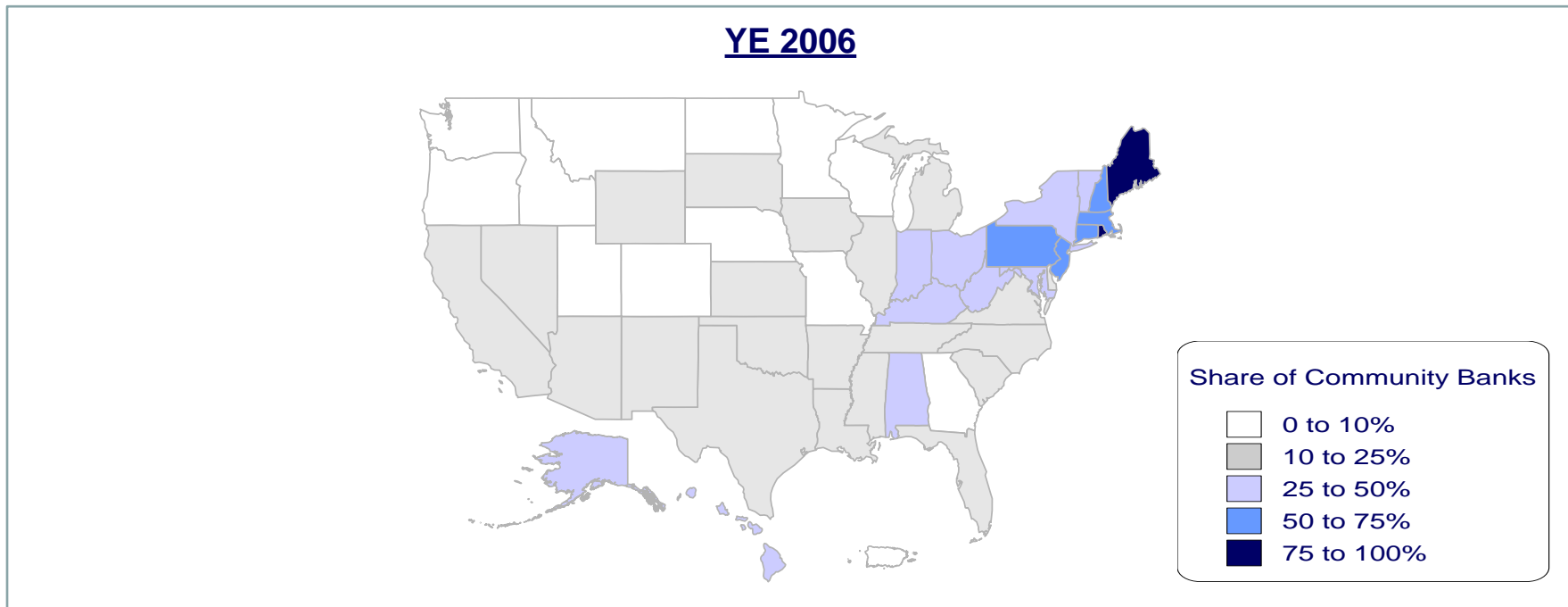
Long-term Concentrations Led to Lower Margins During the Last Rate Cycle



Source: Call Reports, based on median figures. *Earning assets maturing / repricing > 5 years.
Consistent sample of Call filers under \$1B in assets as of 2Q04 only.

Increasing Exposure to Long-term Assets is Being Observed Across the Nation

Share of Banks with Long-term Assets Representing 30% or More of Earning Assets

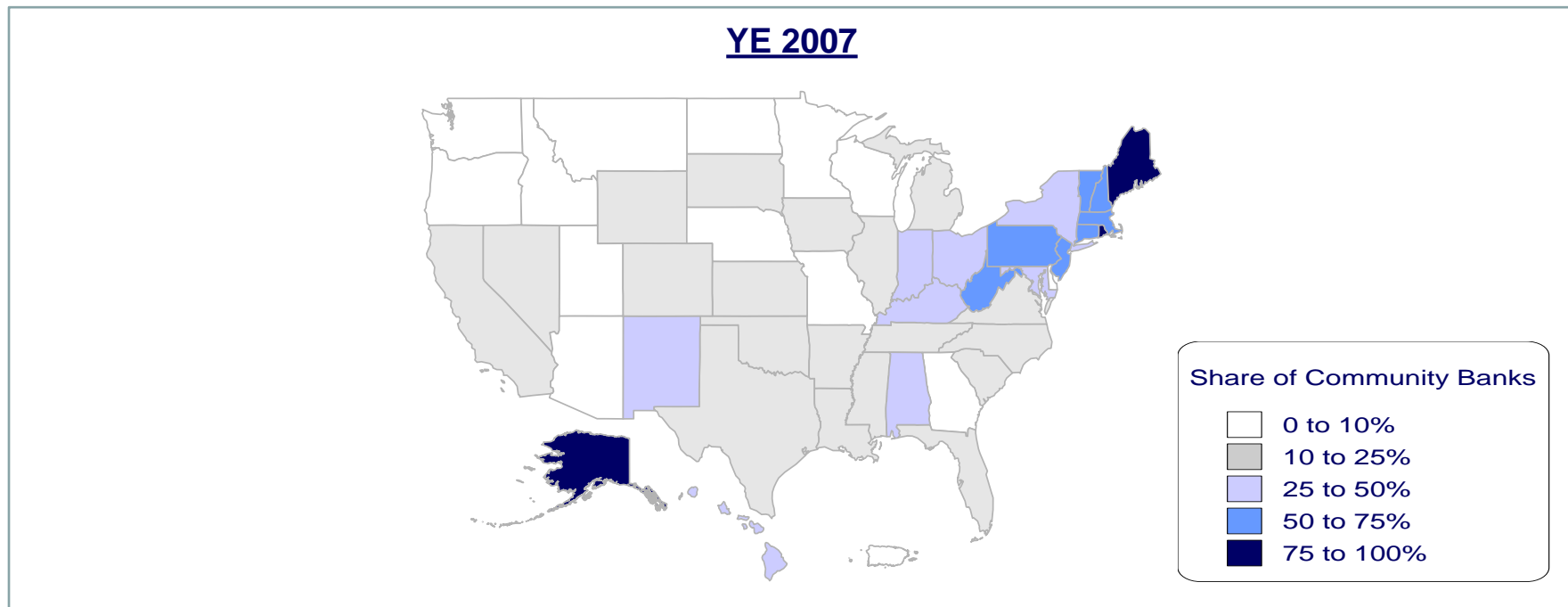


Source: Call Reports. Based on consistent sample of active Call Filers as of 4Q12 with assets < \$1B. Excludes any former TFR filers

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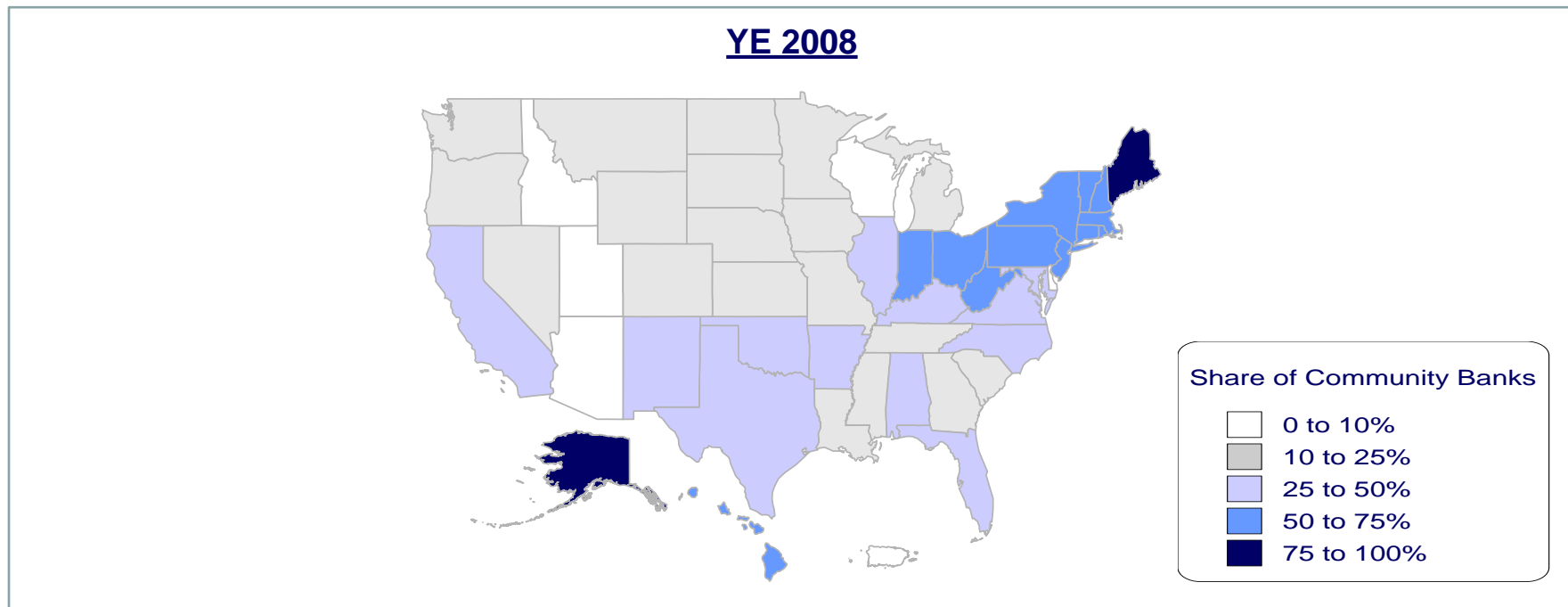


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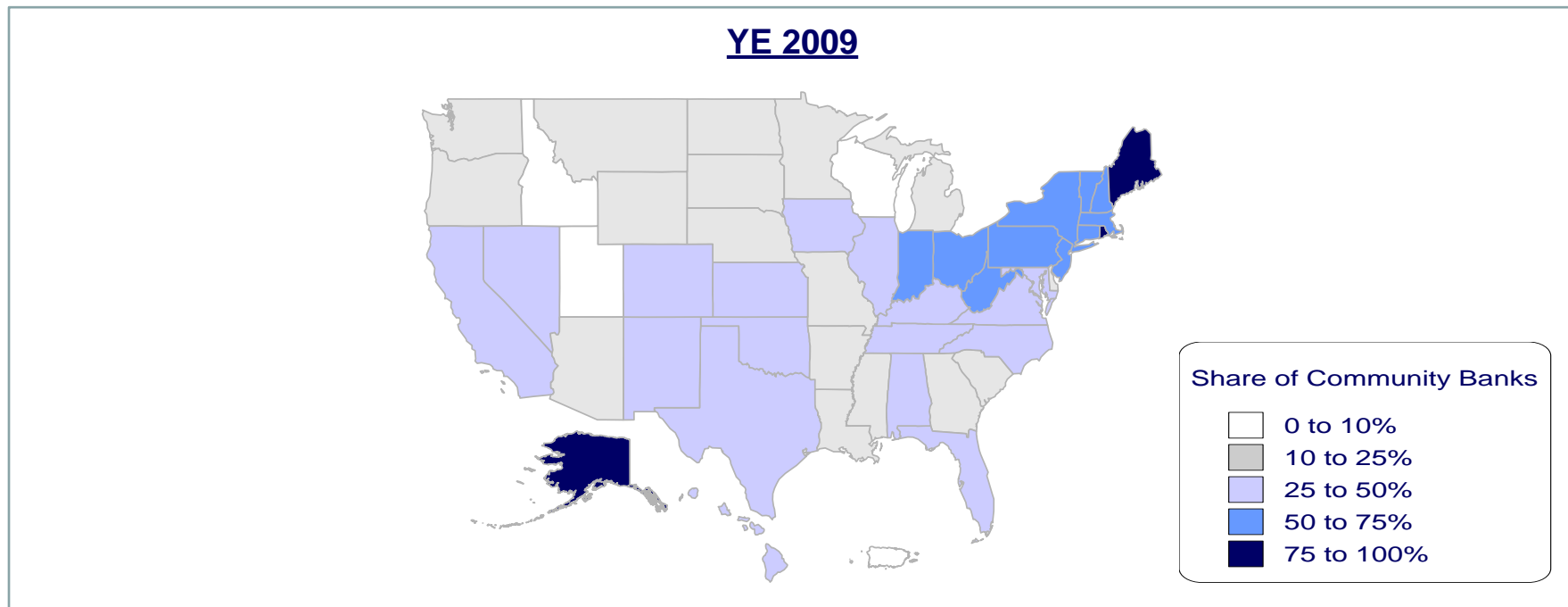
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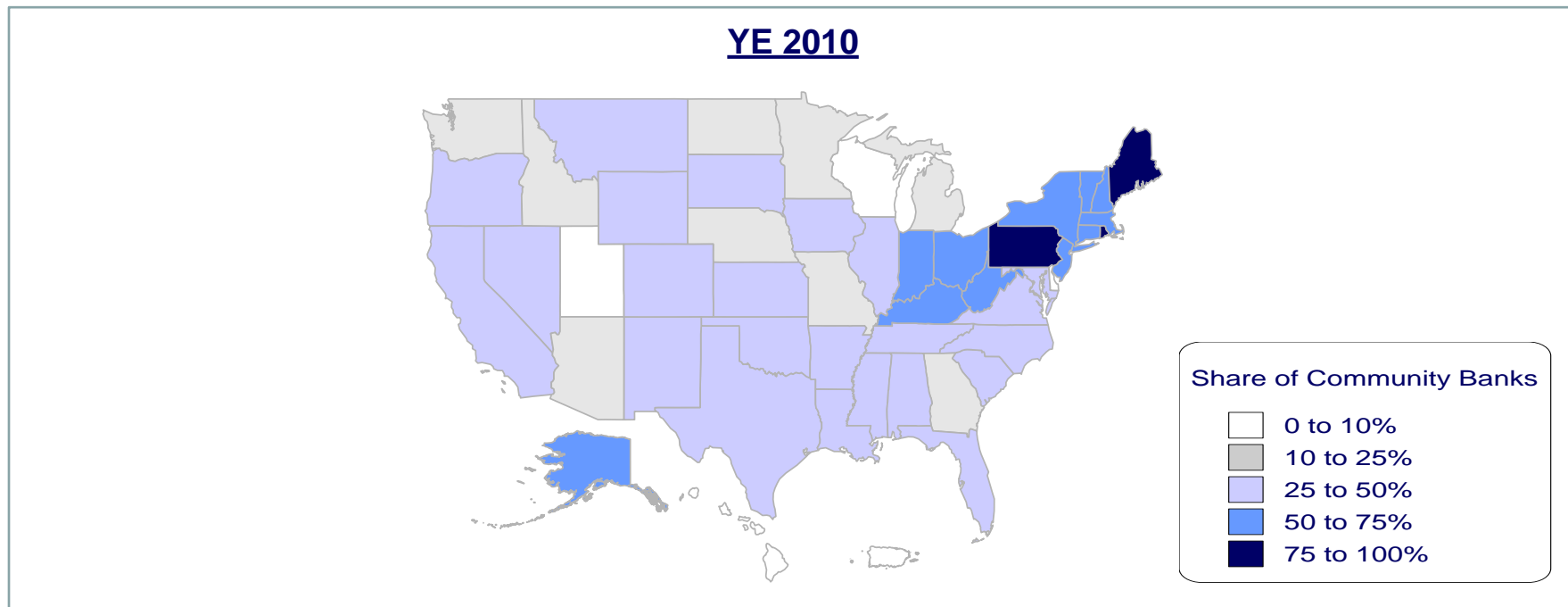
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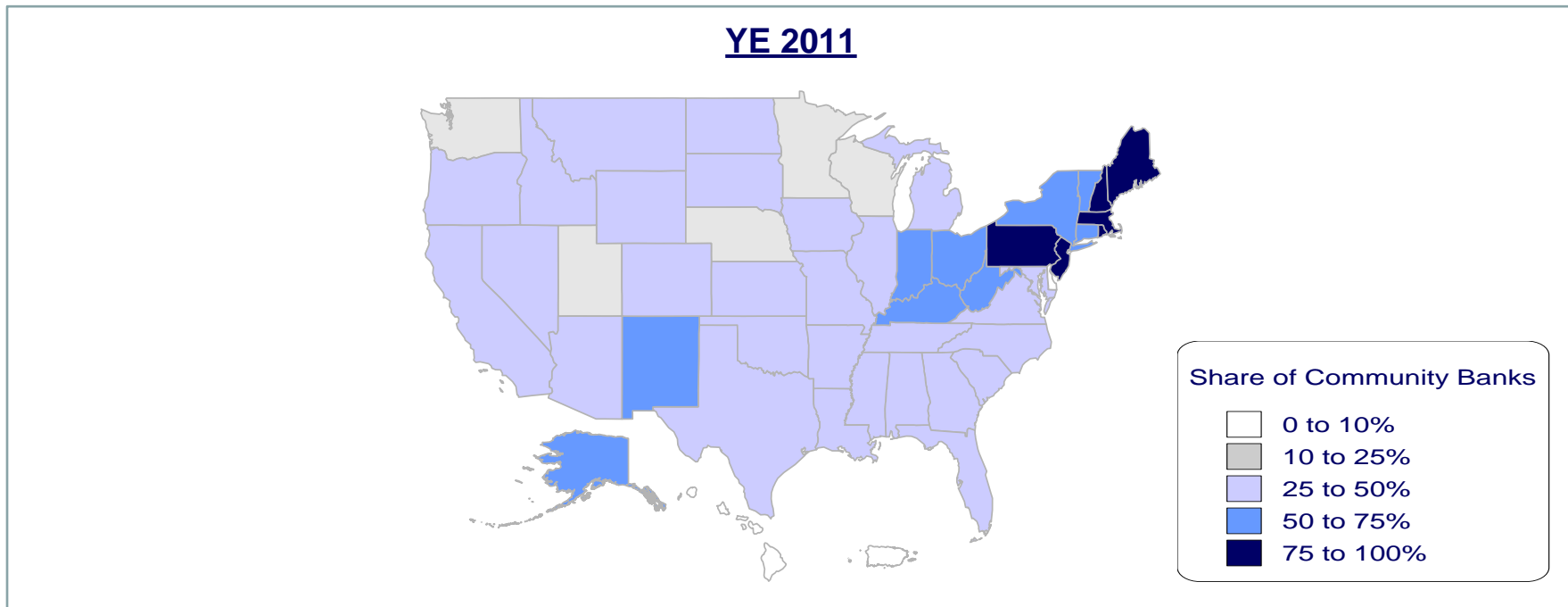
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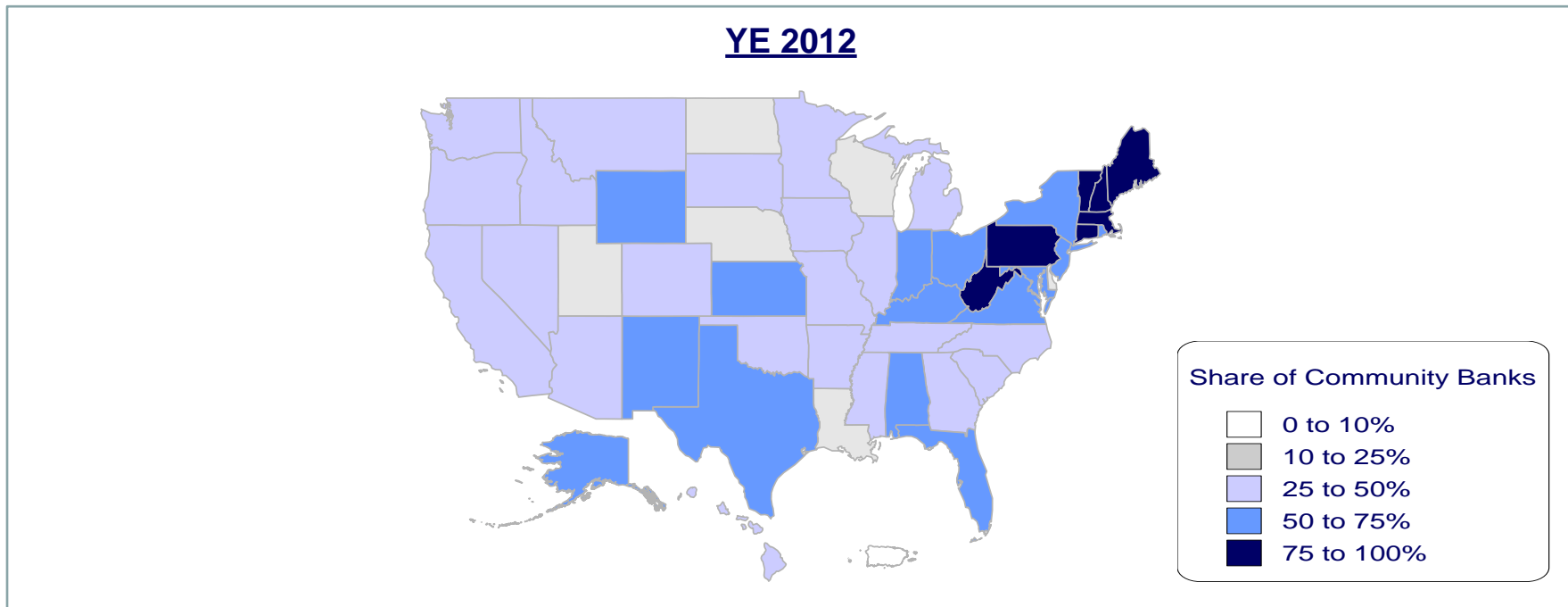


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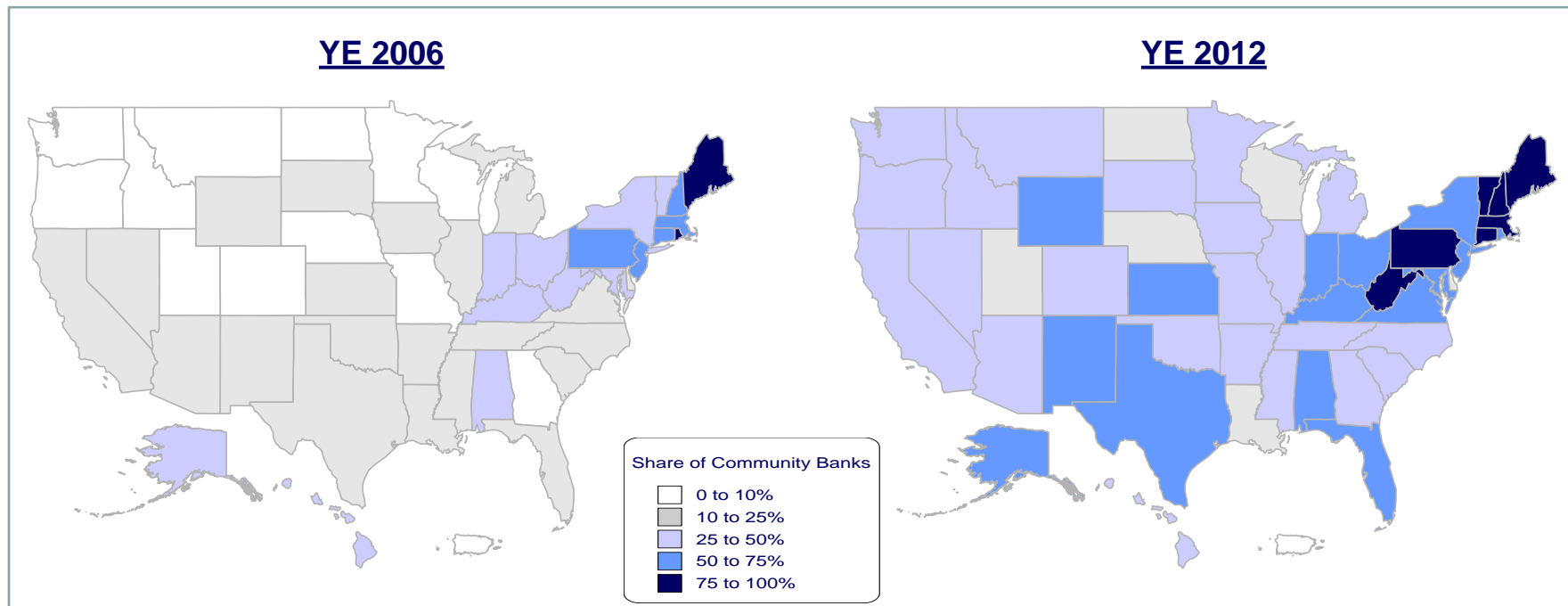


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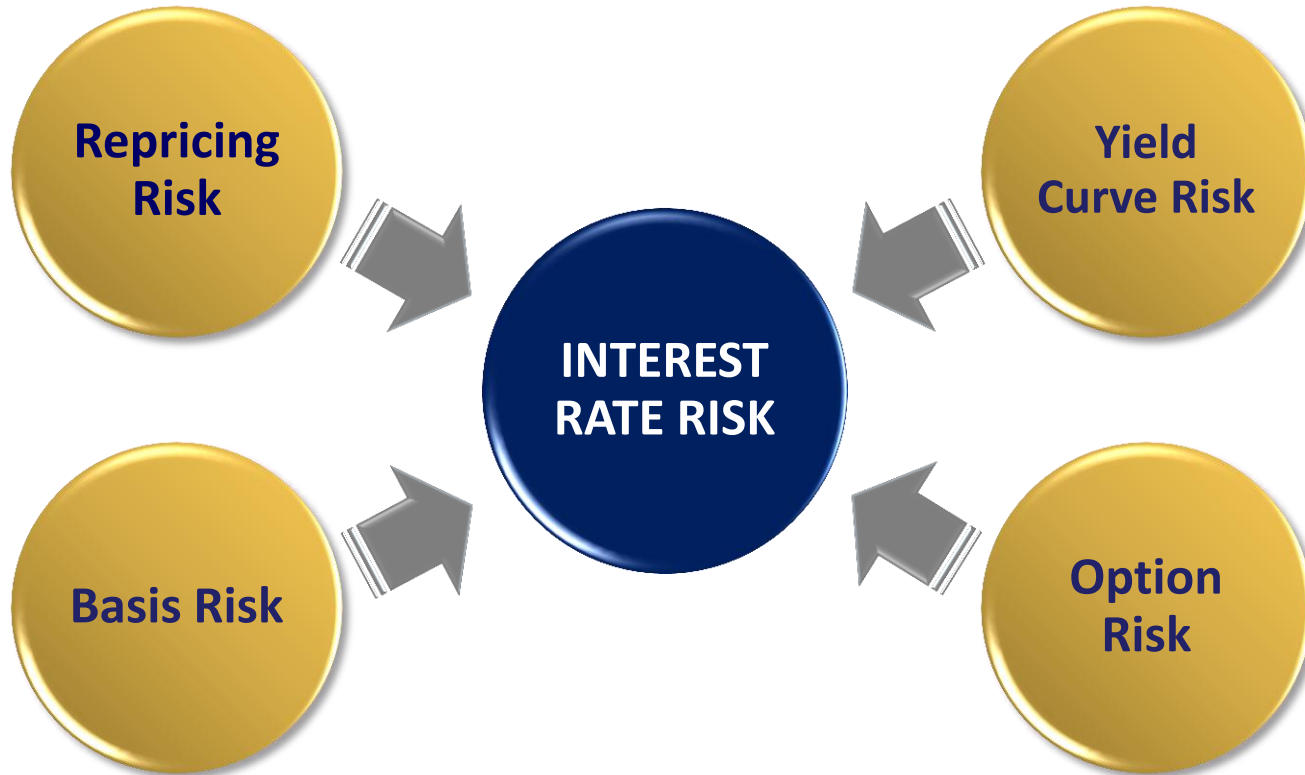
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Types of Interest Rate Risk



Board Responsibilities

**Oversee Policy
Establishment**

**Establish Risk
Tolerances**

**Establish Lines of
Authority and
Responsibilities**

**Monitor IRR
Position**

**Ensure Prudent
IRR Levels**

**Understand Impact
of IRR Strategies**

**Internal Control &
Review**

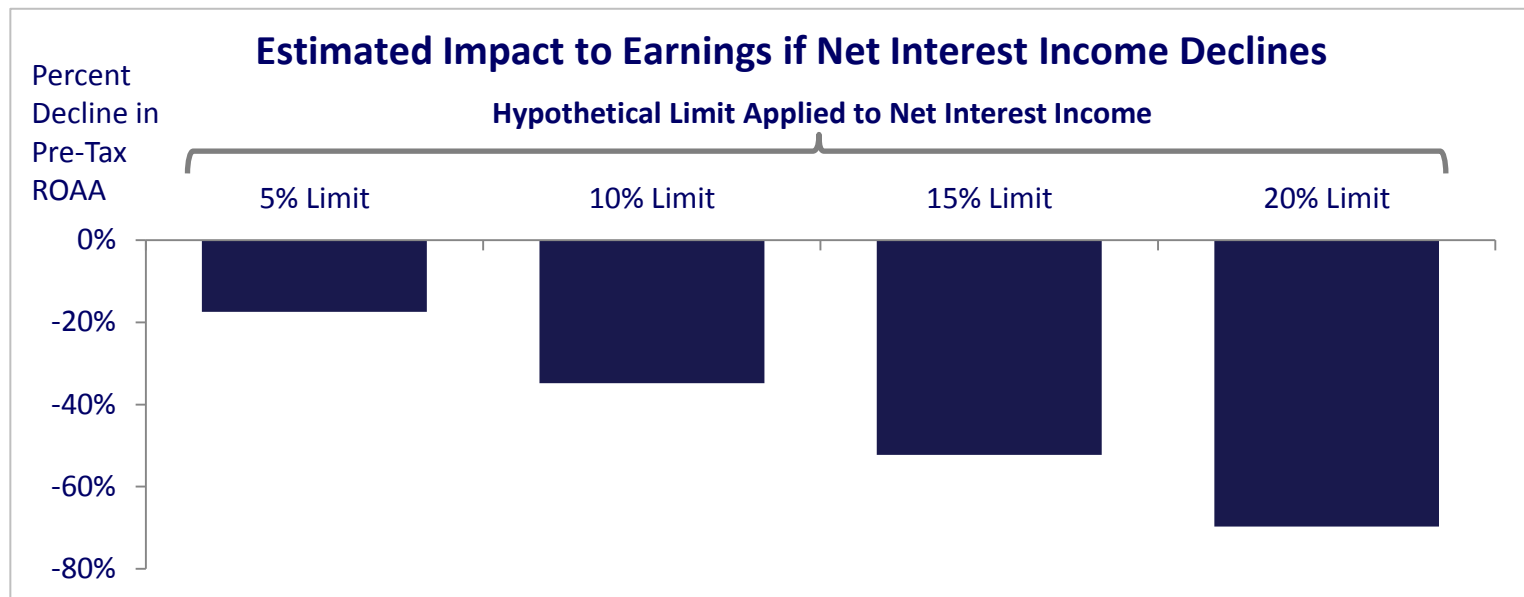
Policies Should Govern the IRR Process & Translate the Board's Goals

- **Risk Limits on Earnings and Economic Value of Equity**
- **Lines of Authority and Responsibilities**
- **Reporting Standards**
- **Independent Review Process**
- **Types of, and Controls over, Instruments and Activities that may be used to Manage IRR**

How to Establish Appropriate Risk Limits

- **Reflect the Board's Risk Tolerance**
- **Consider Capital, Earnings, & Complexity**
- **Change with Risk Profile & Conditions**
- **Trigger Appropriate Action**

Risk Limits: Consider the Bottom Line



- Consider impact of net interest income declines on net income
- Consider impact of non-interest income or off-balance sheet items on net income and establish net income limits

Hypothetical impact to 4Q12 median pre-tax ROAA (0.98%) for insured institutions under \$1B in assets.
Based on applying simple haircut to net interest income, holding all other income drivers constant.

Board Should Oversee IRR Management Process



Types of Measurement Systems

Short-term Models



Gap Analysis



Income Simulation

Long-term Models



Extended
Income Simulation



Economic Value
Of Equity (EVE)

Income Simulation: Measures Income if Rates Change

| Product Type | Balance | Base Case | | +300 bps Scenario | |
|----------------------|---------|-----------|--------|-------------------|--------|
| | | Rate | Income | Rate | Income |
| Fixed Rate Loans | \$1,000 | 4% | \$40 | | |
| 15 Year Muni Bonds | \$1,000 | 4% | \$40 | | |
| Non-maturity Deposit | \$1,500 | 1% | \$15 | | |
| Net Interest Income | | | \$65 | | |

Income Simulation: Measures Income if Rates Change

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| | | Rate | Income | Rate | Income |
| Fixed Rate Loans | \$1,000 | 4% | \$40 | 4% | \$40 |
| 15 Year Muni Bonds | \$1,000 | 4% | \$40 | 4% | \$40 |
| Non-maturity Deposit | \$1,500 | 1% | \$15 | 2% | \$30 |
| Net Interest Income | | | \$65 | | \$50 |

Percent Change in Net Interest Income

- 23%

- Assess Reports to Monitor IRR Levels
- Ensure Levels Comply with Policy Limits

What is Economic Value of Equity?

- **Present Value (Assets) – Present Value (Liabilities) = EVE**
- **Considers the difference between book yield and the market yield**

Loan
Rate 5%

Certificate of Deposit
Rate 1%



Compare Base EVE to Shocked EVE

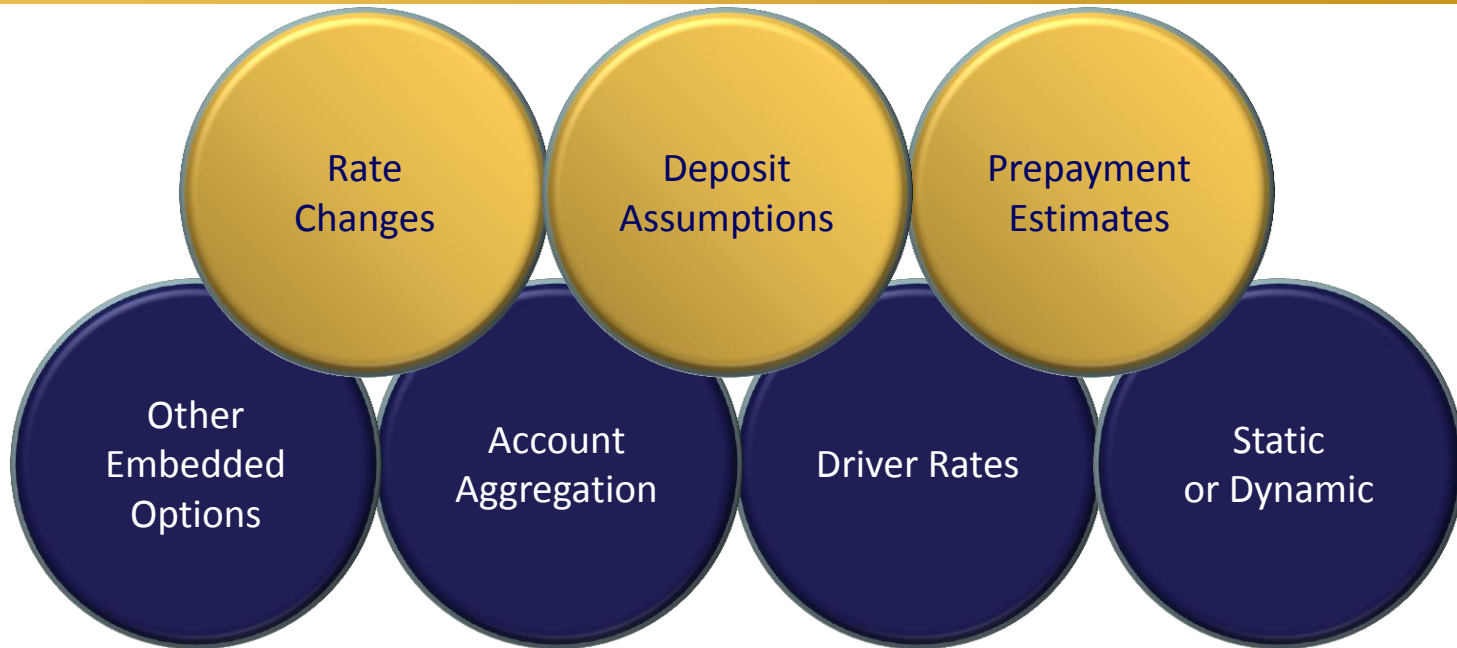
| | Rate Scenarios | | |
|--------------------------|----------------|-----------|----------|
| | -100 bps | Base Case | +300 bps |
| PV (Assets) | \$555 | \$550 | \$525 |
| PV (Liabilities) | \$465 | \$460 | \$450 |
| Economic Value of Equity | \$90 | \$90 | \$75 |
| % Change from Base | 0% | - | -17% |

Asset values decreased more than liability values, resulting in a net decrease in EVE

Combination of Income Simulation and EVE Provides a More Complete Picture of IRR

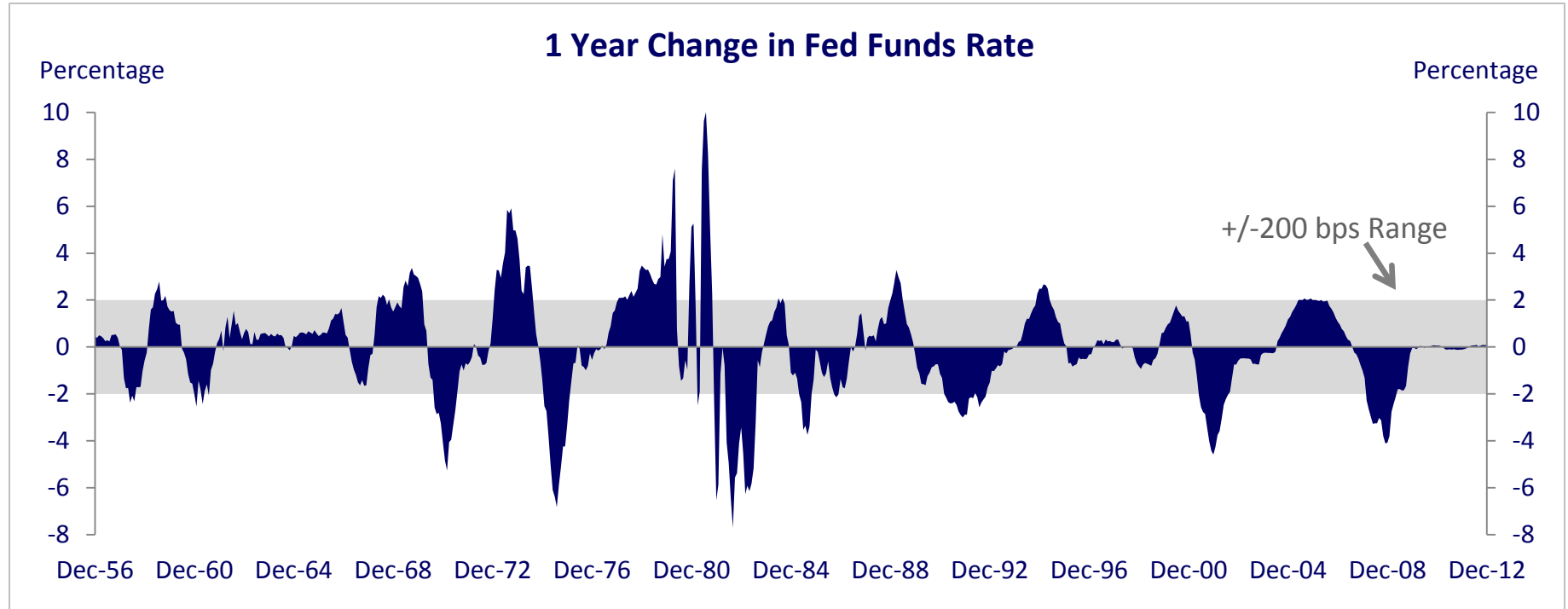
- **EVE**
 - Captures All Cash Flows
 - Long-term
- **Income Simulation**
 - Captures Cash Flows for Period(s) Measured
 - Can Point to “when” IRR Occurs
- **Use of Both Models Provides a More Complete Picture of an Institution’s IRR Exposure**

Model Assumptions

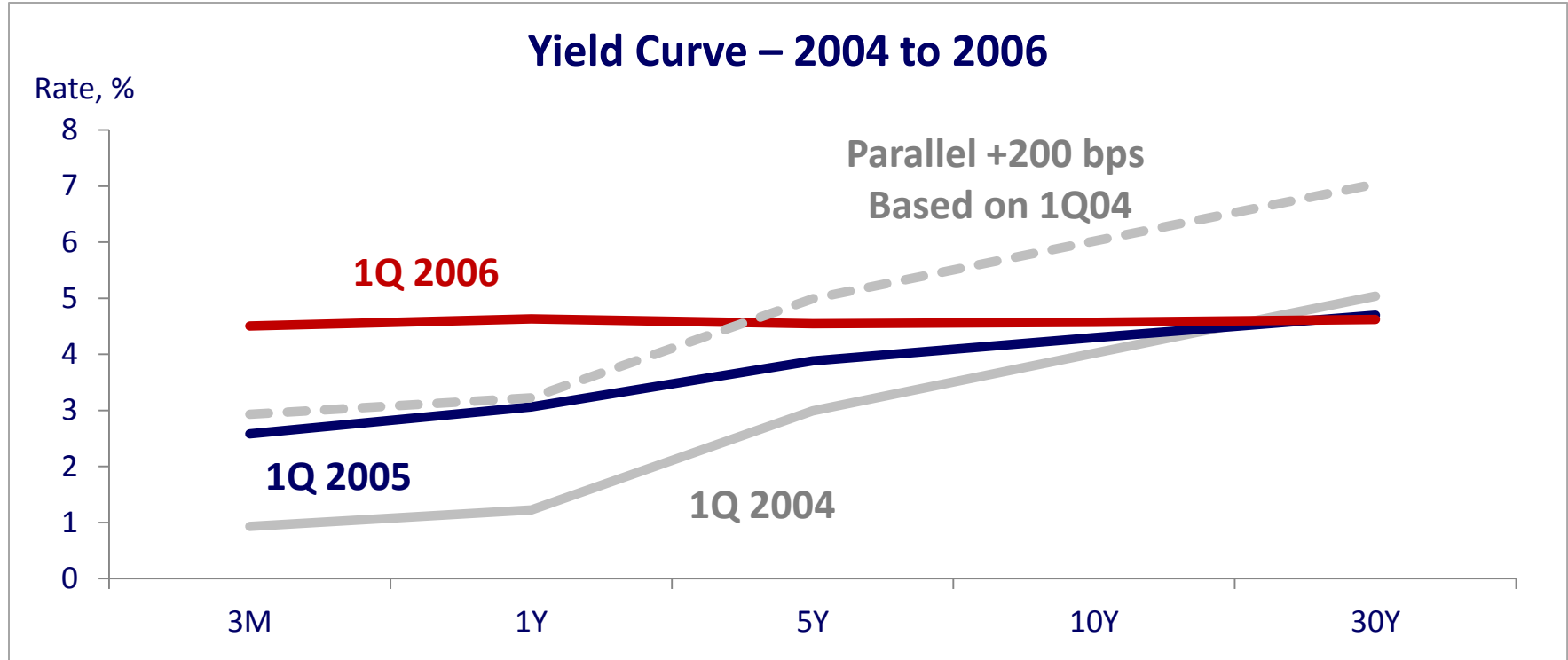


- Ask for written assumptions
- Expect sensitivity analysis

Rate Changes: Sufficient Magnitude & Instantaneous



Rate Changes: Yield Curve Shifts can be Non-parallel



Deposit Assumptions

Price
Sensitivity
(Beta)



Measures deposit rate changes
relative to market rate changes

Example: $\frac{33}{100} = 33\%$

Can differ in falling and rising rate
scenarios

Decay Rate

Average Life

Deposit Assumptions

Price
Sensitivity
(Beta)

Decay Rate

Average Life



Annual percentage of
deposit run-off

Deposit Assumptions

Price
Sensitivity
(Beta)

Decay Rate

Average Life



Weighted average time
(in years) until deposit is
fully repaid

Deposit Assumptions

Price
Sensitivity
(Beta)

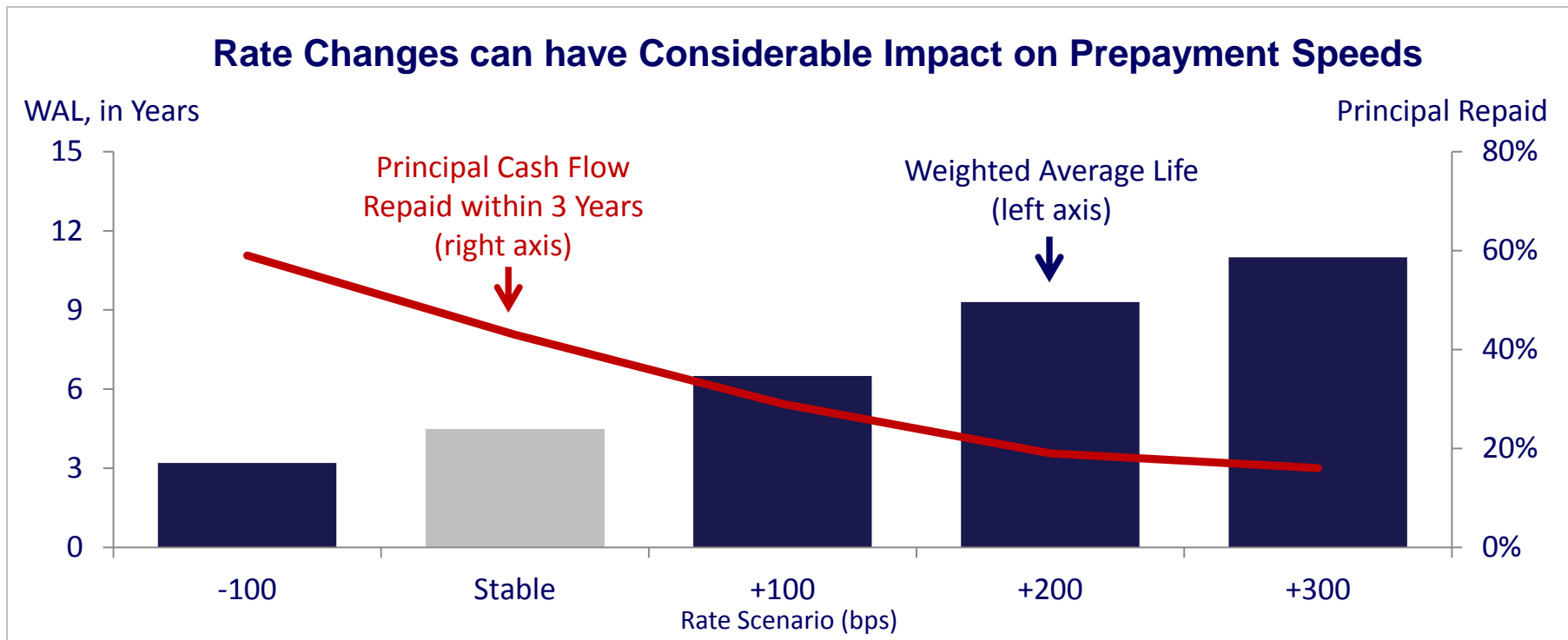
Decay Rate

Average Life

Track historical information and adjust for qualitative factors

Prepayment Speeds

Rate Changes can have Considerable Impact on Prepayment Speeds



Internal Control and Review

Internal Control System:

- Roles, Responsibilities, and Lines of Authority
- Separation of Duties
- Adequacy of System Inputs & Measurement Systems
- Policy Compliance
- Corrective Action Procedures



Questions to Ask Management

- **Problematic rate scenarios**
- **Key assumptions**
- **New products / initiatives**
- **Mitigation strategies**
- **Results reliability**

Resources

- **Outstanding Guidance**

- [Joint Agency Policy Statement on Interest Rate Risk \(FIL-52-96\)](#)
- [Advisory on Interest Rate Risk Management \(FIL-2-2010\)](#)
- [Interagency Advisory on IRR Management: Frequently Asked Questions \(FIL-2-2012\)](#)

- **Regional Senior Capital Markets and Securities Specialists**

- **Additional Videos**

- **Directors' Resource Center: www.fdic.gov/resourcecenter**

- **Mailbox: supervision@fdic.gov**